

ABSTRACT OF THE DISCLOSURE

The invention relates to polymer compositions which enable thermooptic control of signal attenuation in the ultraviolet, visible and near infrared (NIR) regions of the electromagnetic spectrum, and devices incorporating such compositions. The compositions are derived from polymer mixtures which exhibit a cloud point phase transition at a temperature in the range of a thermooptically controlled device such as a programmable waveguide attenuator, a programmable neutral density filter, or an optically absorbent switch. An especially preferred embodiment of the invention comprises a mixture of a high molecular weight chlorotrifluoroethylene fluid and a wax with an "ON-state" insertion loss of below 0.1 dB/cm and an extinction ratio of 22 dB/cm in the 1550 nm NIR telecommunication band.